# Binning  FAME  pixels  into  larger  samples

- The current scheme assumes a window of 20 pixels (4 arsec) cross-scan

- Spin axis motion and CCD misalignment may cause an extra cross-scan smearing over several pixels

- At 10 to 12 pixels of extra cross-scan smearing a significant part of the signal spills out of the window

- The prospects of good photometry on overflowing images are bleak

## SUGGESTION:

Increase the cross-scan size of the window from 20 to 39 pixels by binning electronically each 3 consecutive pixels for the grid stars, and co- adding 39 pixels for the program stars

## CONCLUSIONS:

- No systematic errors in photometry on overflowing images
- Smaller transmission rate for the grid stars by 30 percent
- The loss of astrometric precision is less than 10 percent
- Wider pairs of visual double stars will be adequately resolved

1 pixel = 15 x 15 micron

1 sample = 1 x 3 pixels

1 window = 13 x 13 samples = 13 x 39 pixels

Estimated  cross-scan precision  in single  observation

|  | single pixel binning | 3 pixel binning |
|---|---|---|
| 2 pixel smearing | 0.65 mas | 0.70 mas |
| 6 pixel smearing | 0.82 mas | 0.81 mas |
| 10 pixel smearing | 1.00 mas | 1.08 mas |

apparent star motion